

SMALL DEPRESSION SHRUB BORDER

Concept: Small Depression Shrub Border communities are narrow shrub thickets that occur as an outer zone on the rims of Small Depression Pond, Small Depression Drawdown Meadow, and Vernal Pool communities. These communities are narrow enough to be strongly subject to edge effects from both sides. They contain a mix of pocosin species, such as *Cyrilla racemiflora*, *Lyonia lucida*, and *Smilax laurifolia*, along with some characteristic pond species such as *Ilex myrtifolia*, *Ilex cassine*, *Litsea aestivalis*, and *Cephalanthus occidentalis*. Trees may be sparse or dense but have little effect on the shrubs because of open edges. They may include *Pinus serotina*, but more often will be *Nyssa biflora*, *Acer rubrum*, *Magnolia virginiana*, and *Persea palustris*. Herbaceous species of the adjacent open wetland and the adjacent upland are usually present.

Distinguishing Features: Small Depression Shrub Border is distinguished from all other communities by the combination of shrub dominance and occurrence in a narrow zone on the edge of other, more open depressional wetlands. Small Depression Pocosins may contain some of the same species but will fill most or all of the basins they occur in and will not contain an appreciable amount of *Ilex myrtifolia*, *Ilex cassine*, *Litsea aestivalis*, or *Cephalanthus occidentalis*. Natural Lake Communities may share some species, but generally have a limited shrub layer. They occur on larger bodies of water where wave action is important.

Synonyms: *Cyrilla racemiflora* - *Lyonia lucida* Shrubland (CEGL003844). Small Depression Pond (3rd Approximation).

Ecological Systems: Southern Atlantic Coastal Plain Depression Pondshore (CES203.262).

Sites: Small Depression Shrub Border communities occur primarily in limesinks but can occur in small Carolina bays and in relict dune swales.

Soils: Soils are generally sandy, with only a limited organic layer. Occurrences are smaller than the minimum map unit for soil surveys and are included in the surrounding upland soil units.

Hydrology: Surface water may be present early in the growing season and in unusually wet years. These communities occur on the edge of deeper depressions. This may lead to greater soil drainage during drawdown periods.

Vegetation: The vegetation is dominated by a dense-to-moderate shrub layer. Trees usually have moderate cover but may be denser or may be absent. Both site descriptions and the limited CVS plot data have *Cyrilla racemiflora* as the most constant and usually dominant species. *Lyonia lucida* often is abundant. Other shrubs that may be present, occasionally abundant, include *Vaccinium fuscum*, *Vaccinium formosum*, *Ilex glabra*, *Ilex coriacea*, *Ilex myrtifolia*, *Litsea aestivalis*, *Morella cerifera*, *Ilex cassine*, *Zenobia pulverulenta*, and *Symplocos tinctoria*. Vines may include *Smilax laurifolia*, *Smilax glauca*, *Smilax walteri*, and *Gelsemium sempervirens*. The tree component is highly variable. *Pinus serotina*, *Nyssa biflora*, *Pinus taeda*, *Persea palustris*, *Magnolia virginiana*, *Acer rubrum* var. *trilobum*, *Liquidambar styraciflua*, or other species may be abundant. The herb component is also variable, as species of the adjacent open pond community may extend into the woody border in substantial amounts and species of the adjacent upland may also be present. *Sphagnum* spp. is often present in patches. *Lachnanthes caroliniana*, *Centella*

asiatica, *Rhynchospora* spp., *Hymenachne hemitomon*, *Proserpinaca pectinate*, *Xyris* spp., *Carex striata*, and *Drosera* spp. have been reported, and many other species may possibly occur.

Range and Abundance: Ranked G3? The synonymized associated ranges from North Carolina to Mississippi or Louisiana. This community occurs in a wide variety of basins and is less extremely rare than many Coastal Plain Depression Communities in North Carolina.

Associations and Patterns: Small Depression Shrub Border is a zonal community that occurs with other Coastal Plain Depression Communities. Small Depression Drawdown Meadow and Small Depression Pond are the most frequent associates in the interior of the basin, but Cypress Savanna or Vernal Pool also are possible. On the upland side the adjacent community is usually some kind of longleaf pine community. Where Coastal Plain Depression Communities occur in clusters, Small Depression Shrub Borders are usually present around all or most more open communities. However, a few clusters lack them or have few depressions with them.

Variation: The indistinct variants parallel to those of Small Depression Pocosin may be recognized. All examples also vary with the transition to adjacent communities and in response to recent disturbances.

1. Pocosin Variant consists largely of species typical of Pond Pine Woodland and High Pocosin, though additional species such as *Vaccinium* spp. and *Morella cerifera* are usually present. *Pinus serotina* is the primary tree.
2. Swamp Variant consists of similar shrubs but with a more substantial canopy dominated by *Nyssa biflora*, *Pinus taeda*, *Liquidambar styraciflua*, or occasionally *Taxodium ascendens*. The presence of *Liquidambar styraciflua* is limited to the Sandhills region and other inland areas and may indicate a fine-textured soil version that should be a distinct variant. However, it is unclear if the *Liquidambar* is a long-term natural component or is a result of alteration.
3. Pond Variant has more shrubs not characteristic of pocosins, such as *Ilex myrtifolia*, *Litsea aestivalis*, and *Ilex cassine*.

Dynamics: Small Depression Shrub Border communities are potentially quite variable over time. Their natural dynamics and character are driven by a combination of seasonal but variable flooding and by intrusion of fire from the adjacent uplands, which are almost always longleaf pine communities. With fire suppression, shrub borders expand and shrubs become taller and denser, while the return of fire narrows them and confines them to wetter areas. Natural fires in the summer, fall, and in dry springs, would burn all the way through them and through the adjacent herbaceous wetland communities, top-killing the shrubs and possibly trees. The natural frequency of burning was presumably less frequent than in the uplands, but more frequent than at present. Prescribed fire programs that are confined to the winter or to mild conditions may never burn through these communities, allowing them to expand both into the upland edge and into the open pond communities. Some people believe that shrub border communities are entirely an artifact of inadequate fire. It is likely that some have developed in places where they did not naturally occur. These can be expected to consist solely of the more mobile species, or of species present nearby. However, those with characteristic pond species that are not widespread, such as *Litsea aestivalis*, almost certainly are natural, though perhaps altered in structure.

Comments:

Rare species: *Litsea aestivalis* is the only tightly associated rare plant. Rare species of longleaf pine/pocosin ecotones, such as *Dionaea muscipula*, occasionally occur on the upland edges. Rare amphibians that breed in depressional wetlands normally are in the adjacent wetter communities.

References: